

CLAIMSSub
A4

5

1. A method of retraining a trainable data classifier comprising the steps of:

providing a first item of training data;

10

comparing the first item of training data with a second item of training data already used to train the data classifier;

15

calculating a measure of conflict between the first and second items of training data;

using the first item of training data to retrain the data classifier responsive to the measure of conflict.

20

2. A method according to claim 1 wherein the step of using the first item of training data is responsive to a predetermined conflict threshold value.

25

3. A method according to claim 2 wherein the threshold value is non-zero.

30

4. A method according to claim 1 wherein the measure of conflict comprises a geometric difference between the first and second items of training data.

35

5. A method according to claim 4 wherein the geometric difference comprises a Euclidean distance.

6. A method according to claim 1 wherein the measure of conflict comprises an association coefficient of the first and second items of training data.

7. A method according to claim 6 wherein the association coefficient is a Jaccard's coefficient.

5 8. A method according to claim 7 wherein the measure of conflict is derived from a both a Euclidean distance between and a Jaccard's coefficient of the first and second items of training data.

10 9. A method according to claim 8 wherein the measure of conflict is derived from a Euclidean distance and a Jaccard's coefficient composed in an exponential relationship with respect to each other.

15 10. A method according to claim 8 wherein the measure of conflict is derived from a function of a Euclidean distance multiplied by an exponent of a function of the Jaccard's coefficient.

20 11. A method according to claim 1 wherein the data classifier comprises a neural network.

25 12. A method according to claim 1 wherein the training data comprises telecommunications network data.

30 13. A method according to claim 1 wherein the training data comprises telecommunications call detail record data.

35 14. A method of training a trainable data classifier comprising the steps of:

providing a plurality of items of training data;

comparing a first of the items of training

data with a second of the items of training data;

calculating a measure of conflict between the first and second items of training data;

using one of the first and second items of training data to retrain the data classifier responsive to the measure of conflict.

15. A apparatus for retraining a trainable data classifier and comprising:

an input port for receiving a first item of training data;

a comparator arranged to compare the first item of training data with a second item of training data already used to train the data classifier;

a calculator for calculating a measure of conflict between the first and second items of training data; and

an output port arranged to output the first item of training data to the data classifier responsive to the measure of conflict.

16. A anomaly detection system comprising apparatus according to claim 15.

17. A telecommunications data anomaly detection system comprising apparatus according to claim 15.

18. A telecommunications fraud detection

128371DUS010

OK
Contd.

94
Cont'd.
1

- using the first item of training data to
retrain the data classifier responsive to the

measure of conflict.

22. A program for a computer on a machine readable medium arranged to perform the steps of:

5

receiving a plurality of items of training data;

10

comparing a first of the items of training data with a second of the items of training data;

15

calculating a measure of conflict between the first and second items of training data; and

using one of the first and second items of training data to retrain the data classifier responsive to the measure of conflict.

128371DUS01U

Any
cont.